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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,116	04/14/2004	Franco Leonardi	81100112 / FMC 1694 PUSI	3115
28395	7590	09/22/2004	EXAMINER	
BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			DUDA, RINA I	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/709,116	Applicant(s) LEONARDI ET AL	
	Examiner Rina I Duda	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/15/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Claims 22-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/23/04.

A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7, 10-12, and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by McCann (US Patent 5637974).

McCann teaches a method for controlling an electric motor comprising operating the motor using a position estimator system if the rotational speed is higher, operating the motor using a position sensor system when the speed is higher, as described in column 10 lines 33-64.

Claims 2, 3, 5, 6, 11, 17, McCann describes in column 6 lines 51-67 through column 7 lines 1-3 how position estimator 60 compares the estimated position value to the sensed position signal in order to determine a position error that is used to correct and determined an updated position signal.

Claim 7, McCann describes in column 6 lines 33-57 how the sensorless system uses sensed voltage and sensed current to determine an estimated position signal, which is later used by the position estimated to determined a corrected position signal.

Claim 10, McCann describes a system for controlling an electric motor 50 comprising an inverter 48 connected to the motor, a position estimator 60 connected to the inverter and the motor through means 46, a controller 40 connected to the estimator and the inverter, a position sensor 68 connected to the motor and the estimator, wherein the estimator determines a first position signal based on the voltage and current measured from inverter 48 and determines a second position signal based on the output from the sensor 68. In reference to claim 16, the preamble has not been given any patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim

following the preamble is self contained description of the structure not depending for completeness upon the introductory clause, therefore claim 16 is rejected for the same reasons given above.

Claim 12 and 18, McCann describes in column 7 lines 43-46 that the position sensor is a low-resolution sensor.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCann (US patent 5637974).

Claim 8, McCann discloses the claimed invention except for the threshold speed being about 50 rpm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose 50 rpm, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 9, McCann discloses the claimed invention except for the threshold speed being in the range of about 10 rpm to about 100 rpm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the range mentioned above, since it has been held that where the general condition of a

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claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

7. Claims 13-15 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCann (US Patent 5637974) and Brandenburg et al (US Patent 6073713).

The only difference between claims 13-15 and 19-21 and the teachings of McCann is that the claims recite a specific type of position sensor.

Brandenburg et al teaches the use of camshaft type, crankshaft type sensor, and transmission sensors in a motor vehicle, as described by Brandenburg et al these type of sensors are a form of Hall effect sensors and as described by McCann his position control system uses Hall effect position sensors.

Therefore, it would have been obvious to choose crankshaft, camshaft, or transmission sensors to measure the actual position sensors since these sensors are a type of Hall effect sensors and McCann uses Hall effect sensors in his system.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The documents cited disclose several systems for controlling motors using sensorless and sensor based methods.

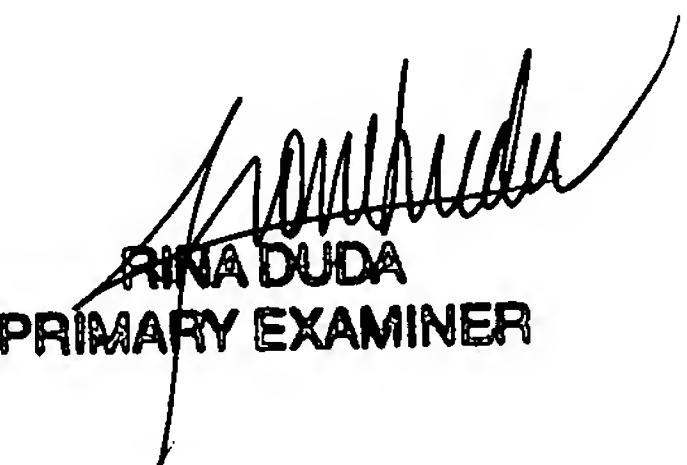
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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rina I Duda whose telephone number is 571-272-2062.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached at 571-272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RD


RINA DUDA
PRIMARY EXAMINER